

Possibility And Opportunities in Solar Power Plant System

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Abstract

The growing threat of global climate change resulting from the build-up of greenhouse gases in the earth's atmosphere has forced national and international bodies into action. A series of targets have been set both for reducing greenhouse gas emissions and increasing the take-up of renewable energy, including solar power. A special group has been established to ensure that these negotiations are concluded "as soon as possible". This is necessary to ensure the continuity of carbon markets, and to allow governments to put policies and measures in place to ensure that the new emission reduction targets are met. With increased cell efficiency and a decrease in cell thickness, as well as optimized production procedures, it is feasible that the EPBT for grid-connected PV will decrease to two years or less for crystalline silicon modules and to one year or less for thin film modules. Solar power is booming. the international PV demand side market divides up into four clear sectors. These are consumer goods and service, grid-connected system, Off-grid electrification off-grid & industrial manufacturing and operating costs. The cost of manufacturing both solar cells and modules and other components has been falling steadily.

Keywords-PV plant, O & M,

I. INTRODUCTION

In India, The total installations will exceed 2 GW by the end of the year, and about half of them would have completed more than 1 year of operations by that time. The solar PV plants in India are entering a phase of maturity. As the plant becomes older, Operation and Maintenance (O&M) becomes more and more important for improving the performance of the plant. This paper is based on the supervision of O&M activities of power plant.

II. Operation and Maintenance issues

In particular, suitable planning, supervision and quality assurance activities are critical at all stages of the PV plant in order to minimize the risk of damages and outages, optimize the use of warranties avoid dilution of resources and ultimately optimize the overall performance of the PV plant. the O&M issues have been broadly classified in the following categories:

- Land availability
- Engineering features
- Grid connection
- Contractors' selection
- Extreme weather events
- Data acquisition
- Security
- Housekeeping
- Environment, Health & Safety
- Stakeholder management

In terms of the process that SolarInsure undergoes when evaluating potential locations for roof top solar-panel systems, there are a number of variables considered. These include wind uplift and the ability to secure the structure,

roof loading, combustibility, drainage and the risk for natural hazards. A number of questions need to be answered in the evaluation process including;

There are five potential risks that SolarInsure considers when evaluating a potential rooftop solar-panel system. These are as follows;

1. *Roof Loading.* How much potential weight can the roof reasonably hold? How will natural weather factors affect the loading process and what effect will the accumulation of weather variables have on the structure?

2. *Combustibility.* Will the solar-panel system affect or change the combustibility of the roof system on the whole? This must be considered as a number of early solar systems contained a backing made of polystyrene plastic, which is known to be extremely combustible.

3. *Wind uplift and its effect on the secure structure.* An evaluation team must take into account the maximum potential of wind in the area and how it will affect the structure. Depending upon the expected force of the winds, the solar-panel system may need to be connected directly to the roof structure. If there is less potential for strong wind then a simple ballast installation may be more than enough to hold the system in place.

4. *Drainage.* How will the installation of a solar-panel system affect the pre-existing drainage system on the roof? If there is an issue of ponding on the structure the loading process can be drastically affected.

5. *Resistance to various natural hazards.* It is of utmost importance to test all solar panels in all conditions to ensure they can resist the effects of ice, snow, hail and wind debris. The Solar Insure evaluation process considers

what testing has been done on the panels and whether or not more needs to be administered in order to ensure safety.

Solar Insure is a leading innovator in most matters of renewable energy. We provide risk management support to all companies, businesses and organizations no matter their size or relating sector. Even in instances when our staff cannot supply direct answers or solutions, we can steer you in the right direction of the appropriate resources that you need.

PV is a simple, low-risk technology that can be installed virtually anywhere where there is available light. This means that there is a huge potential for the use of roofs or façades on public, private industrial buildings. PV modules can be used as part of a building's envelope, providing protection from wind and rain or serving to shade the interior. During their operation such systems can also help reduce buildings' heating loads or assist in ventilation through convection.

OTHER PLACES WHERE PV CAN BE INSTALLED

Include the sound barriers along communication links such as motorways. Also areas such as former mining land are suitable for large ground based PV systems Improving the electricity network.

For power companies and their customers, PV has the advantage of providing relatively quick and modular deployment. This can offset investment in major new plant and help to strengthen the electricity network, particularly at the end of the distribution line. Since power is generated close to the point of use, such distributed generators can reduce transmission losses, improve service reliability for customers and help to provide peak power demand..

PROTECTING THE ENVIRONMENT

Solar power involves none of the polluting emissions or environmental safety concerns associated with conventional generation technologies. There is no pollution in the form of exhaust fumes or noise during operation. Decommissioning a system is unproblematic.

Most importantly, in terms of the wider environment, there are no emissions of carbon dioxide - the main gas responsible for global climate change (see Climate Change and Fuel Choices) during the operation of a PV system. Although indirect emissions of CO₂ occur at other stages of the life-cycle, these are significantly lower than the avoided emissions. Solar power can therefore make a substantial contribution towards international commitments to reduce emissions of greenhouse gases and their contribution to climate change (see box The Climate Change Imperative), if governments adopt a wider use of PV in their national energy generation.

DANGERS OF SOLAR ENERGY

Solar energy is actually produced from a process that occurs within the sun known as nuclear fusion. Nuclear fusion is actually the very same process that is involved in nuclear power plants, and actually employs the same basic nuclear physics laws that applies to atomic bombs. This is definitely a major cause for alarm for most people.

Aside from that, add the fact that the main energy source for solar energy is actually hydrogen, which is a form of gas that is highly explosive, and that is definitely something that you should be aware of. Hydrogen is a tremendously destructive component that can be found in H-bombs, and also produces dangerous fallout for those exposed.

These known dangers of solar energy may sound very threatening, but these are not the only things that you should be worried about, for solar energy could also have other not so well-known dangers that could pose a risk to your health.

Solar Energy Radiation

Right now, we are all actually being subjected to the sun's background radiation, which could be dangerous if exposure to it exceeded a certain level. There is really nothing we can do to prevent being exposed to such background radiation other than to simply avoid sun exposure.

However, if your home uses solar energy to power up your house, you might find it more difficult to do. Since solar energy technology harnesses the power of the sun by concentrating the sunlight, and using its energy to light up your home's light bulb, you could very well be irradiating your entire home, something which could cause skin cancer later on.

BLINDNESS FROM SOLAR ENERGY

Another danger that could stem from using solar energy to power up your different gadgets and electronics at home is that it could cause blindness if you were to expose your eyes to too much radiation from them, just like staring directly at the sun for too long.

SOLAR ENERGY FIRE HAZARDS

Since most solar collectors basically concentrate the sunlight that they are able to collect from the sun, it can be a fire hazard, especially since fire can very easily start if there were very high concentrations and levels of solar energy. These high and dangerous levels of solar concentrations could easily ignite combustible materials, making it a possible fire hazard on any home.

These are just some of the risks that solar energy could pose on you, so make sure that you do some researching first before deciding on whether you want to get and use solar energy technology for your home or not.

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